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EPSON RESEARCH AND DEVELOPMENT INC  
INTELLECTUAL PROPERTY DEPT  
150 RIVER OAKS PARKWAY, SUITE 225  
SAN JOSE, CA 95134

EXAMINER

CHEN, CHONGSHAN

ART UNIT	PAPER NUMBER
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2172

15

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Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/762,127

Applicant(s)

NAGAISHI ET AL.

Examiner

Chongshan Chen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14, 16-25, 27-29, 31-42, 44-49, 51-62 and 64-66 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14, 16-25, 27-29, 31-42, 44-49, 51-62 and 64-66 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Drawings***

1. The correction to the drawings, Fig. 1, 3, 8-10 and 14, filed on 23 April 2003 are objected to because the handwriting correction to the drawing is confusing to draft person. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Response to Arguments***

2. Applicant's arguments, see page 15, filed 8 December 2003, with respect to the rejection(s) of claim(s) 1-66 under 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Sakae (JP 11149479 A). Sakae teaches a step of generating a clustering result summary table representing a summary of the clustering result, and a step of outputting the summary table together with the clustering result, wherein the summary table and the clustering result is distinct (Sakae, Fig. 3-5). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to generate a summary table and display the summary table together with the clustering result so that the user can know additional information about each cluster. The user can choose his/her desired cluster and review documents only in that cluster instead of reviewing all documents. This will enable the user to find desired information more quickly.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 16-17, 22-23 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tso et al. ("Tso", 6,385,602) in view of Sakae (JP 11149479 A).

As per claim 1, Tso teaches an information categorizing method comprising a step of acquiring, through a clustering module, a plurality of search results searched by a search service, a step of performing, through the clustering module, a clustering process on the search results that categorizes the search results into a clustering result, wherein neither the clustering process performing step nor the clustering result is based on any predefined categories (Tso, col. 2, line 53 - col. 3, line 13, col. 4, lines 44-48, "The method comprises the steps of dynamically establishing one or more search results and displaying on the user interface one or more interface objects corresponding to the one or more search result categories", col. 3, lines 52-60, "*Dynamic categorization* involves examining search results and dynamically establishing one or more search result categories based upon attributes of the search results ... a varied of grouping or *clustering* techniques may be used to dynamically establish the search result categories").

Tso does not explicitly disclose a step of generating a clustering result summary table representing a summary of the clustering result, and a step of outputting the summary table together with the clustering result, wherein the summary table and the clustering result is distinct. Sakae teaches a step of generating a clustering result summary table representing a summary of

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the clustering result, and a step of outputting the summary table together with the clustering result, wherein the summary table and the clustering result is distinct (Sakae, Fig. 3-5).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to generate a summary table and display the summary table together with the clustering result so that the user can know additional information about each cluster. The user can choose his/her desired cluster and review documents in the cluster instead of reviewing all documents. This will enable the user to find desired information more quickly.

As per claim 16, Tso and Sakae teach all the claimed subject matters as discussed in claim 1, and further teaches the clustering result summary table includes a cluster name of each cluster which is obtained through the clustering process (Tso, Fig. 3A - 3C).

As per claim 17, Tso and Sakae teach all the claimed subject matters as discussed in claim 16, and further teaches the clustering result is mutually linked with the clustering result summary table, wherein when a cluster name portion of the clustering result summary table is designated, the corresponding cluster portion of the clustering result is displayed, and wherein when one cluster portion of a clustering result is designated, the clustering result summary table is displayed (Tso, Fig. 3A - 3C).

As per claim 22, Tso and Sakae teach all the claimed subject matters as discussed in claim 16, and further teaches a plurality of documents to be clustered are the ones which have been searched using a keyword input by a user, the manner of displaying the cluster names containing the keyword input by the user is different in the clustering result summary table from the other cluster names (Tso, Fig. 3A-3C, col. 9, lines 49 - 67).

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Claims 23 and 27 are rejected on grounds corresponding to the reasons given above for claim 1.

5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tso et al. ("Tso, 6,385,602) in view of Sakae (JP 11149479 A) and further in view of Fries et al. ("Fries", 6,513,031).

As per claim 2, Tso and Sakae teach all the claimed subject matters as discussed in claim 1, except for explicitly disclosing a step of converting, through a converter module, the search result searched by the search service into a format that is processed by the clustering module. Fries discloses a step of converting, through a converter module, the search result searched by the search service into a format that is processed by the clustering module (Fries, col. 21, lines 27-29). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have a converter module in the system of Tso in order to convert the search result into a format known by the clustering module for clustering.

6. Claims 2-6, 24 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tso et al. ("Tso, 6,385,602) in view of Sakae (JP 11149479 A) in view of Fries et al. ("Fries", 6,513,031) and further in view of Oren Zamir et al. ("Zamir", "Grouper: a dynamic clustering interface to Web search results", Computer Networks, Vol. 31, No. 11-16, pp. 1361-1374, 17, May, 1999).

As per claim 3, Tso, Sakae and Fries teach all the claimed subject matters as discussed in claim 2, except for explicitly disclosing the converter module is arranged correspondingly to each of a plurality of search services when the clustering process is performed correspondingly to the plurality of search services. Zamir teaches the converter module is arranged

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correspondingly to each of a plurality of search services when the clustering process is performed correspondingly to the plurality of search services (Zamir, page 1366, Fig. 3).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to cluster documents according to a plurality of search services in the system of Tso in order to provide plurality of search service to user and allow the user to choose his/her interested search service.

As per claim 4, Tso, Sakae, Fries and Zamir teach all the claimed subject matters as discussed in claim 3, and further teach a search process is performed using one search service selected from the plurality of search services and the clustering process is performed on the search result searched by the selected search service (Zamir, page 1366, Fig. 3).

As per claim 5, Tso, Sakae, Fries and Zamir teach all the claimed subject matters as discussed in claim 3, and further teach search processes are performed in parallel using at least two search services of the plurality of search services, respective search results are collected, and the clustering process is performed on the collected search results (Zamir, page 1366-1377).

As per claim 6, Tso, Sakae, Fries and Zamir teach all the claimed subject matters as discussed in claim 3, and further teach search processes are performed in parallel using at least two search services of the plurality of search services, and the clustering process is individually performed on the search results (Zamir, page 1366-1377).

Claims 24 and 28 are rejected on grounds corresponding to the reasons given above for claim 2.

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7. Claims 7, 13, 31-32, 41, 44-45, 47-48, 51-52, 61, and 64-65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tso et al. ("Tso", 6,385,602) in view of Sakae (JP 11149479 A) and further in view of Mukherjea et al. ("Mukherjea", 6,415,282).

As per claim 7, Tso and Sakae teach all the claimed subject matters as discussed in claim 1, except for explicitly disclosing information to be clustered is at least one of the title of a document, a URL address, an update date, and a file size of an individual search result. Mukherjea teaches information to be clustered is at least one of the title of a document, a URL address, an update date, and a file size of an individual search result (Mukherjea, col. 3, lines 40-43). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use title of a document, URL address, an update date, and a file size to cluster documents in the system of Tso in order to cluster search result.

As per claim 13, Tso, Sakae and Mukherjea teach all the claimed subject matters as discussed in claim 7, and further teach the clustering process is performed based on a feature, and wherein the title of each document is detected and a word characteristic of and contained in the title is extracted as the feature (Tso, col. 51-55).

As per claim 31, Tso teaches a method for categorizing digital information, comprising the steps of:

acquiring at least one group of a plurality of digital items from at least one search of a database or network (Tso, col. 2, line 53 - col. 3, line 13);

clustering the plurality of digital items in at least one group according to each of the selected cluster-indexing information (Tso, col. 2, line 53 - col. 3, line 13); and



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outputting each cluster of digital items as a cluster result (Tso, col. 2, line 53 - col. 3, line 13);

wherein neither the clustering nor the cluster result is based on any predefined categories (Tso, col. 2, line 53 - col. 3, line 13).

Tso does not explicitly disclose a step of generating a clustering result summary table representing a summary of the clustering result, and a step of outputting the summary table together with the clustering result, wherein the summary table and the clustering result is distinct. Sakae teaches a step of generating a clustering result summary table representing a summary of the clustering result, and a step of outputting the summary table together with the clustering result, wherein the summary table and the clustering result is distinct (Sakae, Fig. 3-5). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to generate a summary table and display the summary table together with the clustering result so that the user can know additional information about each cluster. The user can choose his/her desired cluster and review documents in the cluster instead of reviewing all documents. This will enable the user to find desired information more quickly.

Tso does not explicitly disclose extracting from each item in at least one group of a plurality of digital items selected cluster-indexing information comprising at least one of title, URL address, update date, and file size. Mukherjea teaches extracting from each item in at least one group of a plurality of digital items selected cluster-indexing information comprising at least one of title, URL address, update date, and file size (Mukherjea, col. 3, lines 40-43). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made

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to use title of a document, URL address, an update date, and a file size to cluster documents in the system of Tso in order to cluster search result.

As per claim 32, Tso, Sakae and Mukherjea teach all the claimed subject matters as discussed in claim 31, except for explicitly disclosing converting each of the acquired digital items into a common format before performing the clustering. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to convert each of the acquired digital items into a common format before performing the clustering so that the clustering module can cluster the acquired digital items. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to convert each of the acquired digital items into a common format before performing the clustering so that the clustering module can cluster the acquired digital items.

As per claim 41, Tso, Sakae and Mukherjea teach all the claimed subject matters as discussed in claim 31, and further teaches the title of each digital item in at least one group of a plurality of digital items is extracted, each title being defined by selected characters in the corresponding digital item, the selected characters being identified by one of location, size and a fixed number of words in from a designated beginning of the digital item, and wherein the identified selected characters are extracted and clustering is performed based on the selected characters extracted (Mukherjea, col. 3, line 34 - col. 5, lines 65).

As per claim 44, Tso, Sakae and Mukherjea teach all the claimed subject matters as discussed in claim 15, and further teach the clustering result summary table includes a cluster name of each cluster which is obtained through the clustering process (Tso, Fig. 3A - 3C).

As per claim 45, Tso, Sakae and Mukherjea teach all the claimed subject matters as discussed in claim 16, and further teach the clustering result is mutually linked with the clustering result summary table, wherein when a cluster name portion of the clustering result summary table is designated, the corresponding cluster portion of the clustering result is displayed, and wherein when one cluster portion of a clustering result is designated, the clustering result summary table is displayed (Tso, Fig. 3A - 3C).

Claims 47-48 and 51-52 are rejected on grounds corresponding to the reasons given above for claims 31-32.

Claim 61 is rejected on grounds corresponding to the reasons given above for claim 41.

Claims 64-65 are rejected on grounds corresponding to the reasons given above for claims 44-45.

8. Claims 8-12, 14, 20-21, 25 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tso et al. ("Tso", 6,385,602) in view of Sakae (JP 11149479 A) and further in view of Jacobson et al. ("Jacobson", 6,167,397).

As per claim 8, Tso and Sakae teach all the claimed subject matters as discussed in claim 1, except for explicitly disclosing the order of the clustering result is rearranged using a score indicating the degree of match between the clustering result and a search request for each document and the clustering result with the order thereof rearranged is then output. Jacobson teaches disclosing the order of the clustering result is rearranged using a score indicating the degree of match between the clustering result and a search request for each document and the clustering result with the order thereof rearranged is then output (Jacobson, col. 1, lines 58-63). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention

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was made to use a score to indicate the degree of match in the system of Tso in order to provide a ranked list of document clusters. The ranked list tells the user which document is most relevant.

As per claim 9, Tso, Sakae and Jacobson teach all the claimed subject matters as discussed in claim 8, except for explicitly disclosing calculating the average of scores of the documents contained in each cluster to treat the average of each cluster as a cluster score. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to calculate the average of scores of the documents contained in each cluster to treat the average of each cluster as a cluster score in order to use the cluster score to rank the clusters. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to calculate the average of scores of the documents contained in each cluster to treat the average of each cluster as a cluster score in order to use the cluster score to rank the clusters.

As per claim 10, Tso, Sakae and Jacobson teach all the claimed subject matters as discussed in claim 8, except for explicitly disclosing determining the maximum value of the scores of the documents in each cluster to treat the maximum score of each cluster as the cluster score. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to determine the maximum value of the scores of the documents in each cluster to treat the maximum score of each cluster as the cluster score in order to use the cluster score to rank the clusters. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to determine the maximum value of the scores of the documents in each cluster to treat the maximum score of each cluster as the cluster score in order to use the cluster score to rank the clusters.

As per claim 11, Tso, Sakae and Jacobson teach all the claimed subject matters as discussed in claim 8, except for explicitly disclosing determining a score at a midway point or a substantially midway point in each cluster when the documents contained in each cluster are arranged in the order of magnitude of scores assigned thereto, to treat the score at the midway point or the substantially midway point as the cluster score. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to determine a score at a midway point or a substantially midway point in each cluster when the documents contained in each cluster are arranged in the order of magnitude of scores assigned thereto, to treat the score at the midway point or the substantially midway point as the cluster score in order to use the cluster score to rank cluster. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to determine a score at a midway point or a substantially midway point in each cluster when the documents contained in each cluster are arranged in the order of magnitude of scores assigned thereto, to treat the score at the midway point or the substantially midway point as the cluster score in order to use the cluster score to rank cluster.

As per claim 12, Tso, Sakae and Jacobson teach all the claimed subject matters as discussed in claim 9, and further teach the cluster score determining step for rearranging the cluster order is individually performed correspondingly to the plurality of search services when the clustering process is performed correspondingly to the search results provided by the plurality of search services (Jacobson, col. 1, line 58 - col. 2, line 22).

As per claim 14, Tso, Sakae and Jacobson teach all the claimed subject matters as discussed in claim 8, and further teach displaying the clusters in the order of the magnitude of

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scores from a high score to a low score and wherein when there are clusters having the same cluster score, one of the clusters having a larger number of documents there within is positioned higher in the cluster order (Jacobson, col. 1, line 58 - col. 2, line 22).

As per claim 20, Tso and Sakae teach all the claimed subject matters as discussed in claim 16, and further teaches displaying the clustering result summary table (Tso, Fig. 3C). Tso does not explicitly disclose the arrangement order of clusters forming the clustering result summary table agrees with the arrangement order of the clusters in the clustering result. Jacobson teaches ranking the clusters (Jacobson, col. 1, line 58 - col. 2, line 22). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Jacobson with Tso to match the arrangement order of clusters forming the clustering result summary table with the arrangement order of the clusters in the clustering result so that the summary table entries are matched with their corresponding clusters.

As per claim 21, Tso and Sakae teach all the claimed subject matters as discussed in claim 16, and further teaches displaying the clustering result summary table (Tso, Fig. 3C). Tso does not explicitly disclose the manner of displaying the cluster names is changed in the clustering result summary table depending on the importance of each cluster in response to the clustering result. Jacobson teaches ranking the clusters (Jacobson, col. 1, line 58 - col. 2, line 22). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Jacobson with Tso to display the clustering result summary table depending on the importance of each cluster in response to the clustering result in order to display the most important clustering result summary entry first to attract the user's attention.

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Claims 25, 29 are rejected on grounds corresponding to the reasons given above for claim 8.

9. Claims 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tso et al. ("Tso", 6,385,602) in view of Sakae (JP 11149479 A) and further in view of Oren Zamir et al. ("Zamir", "Grouper: a dynamic clustering interface to Web search results", Computer Networks, Vol. 31, No. 11-16, pp. 1361-1374, 17, May, 1999).

As per claim 18, Tso and Sakae teach all the claimed subject matters as discussed in claim 17, except for explicitly disclosing the head portion of an outline surrounding the cluster or the last line in the outline of the cluster present immediately prior to the first cluster is displayed on the top of a screen. Zamir discloses the head portion of an outline surrounding the cluster or the last line in the outline of the cluster present immediately prior to the first cluster is displayed on the top of a screen (Zamir, page 1365). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Zamir with Tso in order to provide clustering summary information.

As per claim 19, Tso, Sake and Zamir teach all the claimed subject matters as discussed in claim 18, and further teach the clustering result summary table is displayed with the head portion thereof appearing first on the screen (Zamir, page 1365).

10. Claims 33-35 and 53-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tso et al. ("Tso", 6,385,602) in view of Sakae (JP 11149479 A) in view of Mukherjea et al. ("Mukherjea", 6,415,282) and further in view of Oren Zamir et al. ("Zamir", "Grouper: a dynamic clustering interface to Web search results", Computer Networks, Vol. 31, No. 11-16, pp. 1361-1374, 17, May, 1999).

As per claim 33, Tso, Sakae and Mukherjea teach all the claimed subject matters as discussed in claim 31, except for explicitly disclosing the at least one group of a plurality of digital items is acquired by selecting only one such group from a plurality of groups, each group being the result of an independent search, and wherein the clustering is performed on the selected one group. Zamir teaches the at least one group of a plurality of digital items is acquired by selecting only one such group from a plurality of groups, each group being the result of an independent search, and wherein the clustering is performed on the selected one group (Zamir, Fig. 3, page 1366-1367). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Zamir with Tso in order to allow the user to select a search group.

As per claim 34, Tso, Sakae and Mukherjea and Zamir teach all the claimed subject matters as discussed in claim 31, and further teach wherein the at least one group of a plurality of digital items acquired comprises a plurality of such groups, each group being the result of an independent search performed in parallel with one another, and wherein the clustering is performed on the collective search results (Zamir, Fig. 3, page 1366-1367).

As per claim 35, Tso, Sakae, Mukherjea and Zamir teach all the claimed subject matters as discussed in claim 31, and further teach wherein the at least one group of a plurality of digital items acquired comprises a plurality of such groups, each group being the result of an independent search performed in parallel with one another, and wherein the clustering is individually performed on the search result (Zamir, Fig. 3, page 1366-1367).

Claims 53-55 are rejected on grounds corresponding to the reasons given above for claims 33-35.



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11. Claims 36-40, 42, 46, 49, 56-60, 62 and 66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tso et al. ("Tso", 6,385,602) in view of Sakae (JP 11149479 A) in view of Mukherjea et al. ("Mukherjea", 6,415,282) and further in view of Jacobson et al. ("Jacobson", 6,167,397).

As per claim 36, Tso, Sakae and Mukherjea teach all the claimed subject matters as discussed in claim 31, except for explicitly disclosing the order of the clustering result is rearranged using a score indicating the degree of match between the clustering result and a search request for each document and the clustering result with the order thereof rearranged is then output. Jacobson teaches disclosing the order of the clustering result is rearranged using a score indicating the degree of match between the clustering result and a search request for each document and the clustering result with the order thereof rearranged is then output (Jacobson, col. 1, lines 58-63). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a score to indicate the degree of match in the system of Tso in order to provide a ranked list of document clusters. The ranked list tells the user which document is the most relevant.

As per claim 37, Tso, Sakae, Mukherjea and Jacobson teach all the claimed subject matters as discussed in claim 36, except for explicitly disclosing calculating the average of scores of the documents contained in each cluster to treat the average of each cluster as a cluster score. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to calculate the average of scores of the documents contained in each cluster to treat the average of each cluster as a cluster score in order to use the cluster score to rank the clusters. Therefore, it would have been obvious to one of ordinary skill in the art at the time the

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invention was made to calculate the average of scores of the documents contained in each cluster to treat the average of each cluster as a cluster score in order to use the cluster score to rank the clusters.

As per claim 38, Tso, Sakae, Mukherjea and Jacobson teach all the claimed subject matters as discussed in claim 36, except for explicitly disclosing determining the maximum value of the scores of the documents in each cluster to treat the maximum score of each cluster as the cluster score. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to determine the maximum value of the scores of the documents in each cluster to treat the maximum score of each cluster as the cluster score in order to use the cluster score to rank the clusters. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to determine the maximum value of the scores of the documents in each cluster to treat the maximum score of each cluster as the cluster score in order to use the cluster score to rank the clusters.

As per claim 39, Tso, Sakae, Mukherjea and Jacobson teach all the claimed subject matters as discussed in claim 36, except for explicitly disclosing determining a score at a midway point or a substantially midway point in each cluster when the documents contained in each cluster are arranged in the order of magnitude of scores assigned thereto, to treat the score at the midway point or the substantially midway point as the cluster score. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to determine a score at a midway point or a substantially midway point in each cluster when the documents contained in each cluster are arranged in the order of magnitude of scores assigned thereto, to treat the score at the midway point or the substantially midway point as the cluster score in order

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to use the cluster score to rank cluster. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to determine a score at a midway point or a substantially midway point in each cluster when the documents contained in each cluster are arranged in the order of magnitude of scores assigned thereto, to treat the score at the midway point or the substantially midway point as the cluster score in order to use the cluster score to rank cluster.

As per claim 40, Tso, Sakae, Mukherjea and Jacobson teach all the claimed subject matters as discussed in claim 36, and further teach the cluster score determining step for rearranging the cluster order is individually performed correspondingly to the plurality of search services when the clustering process is performed correspondingly to the search results provided by the plurality of search services (Jacobson, col. 1, line 58 - col. 2, line 22).

As per claim 42, Tso, Sakae, Mukherjea and Jacobson teach all the claimed subject matters as discussed in claim 36, and further teach displaying the clusters in the order of the magnitude of scores from a high score to a low score and wherein when there are clusters having the same cluster score, one of the clusters having a larger number of documents there within is positioned higher in the cluster order (Jacobson, col. 1, line 58 - col. 2, line 22).

As per claim 46, Tso, Sakae, Mukherjea teaches all the claimed subject matters as discussed in claim 43, and further teaches displaying the clustering result summary table (Tso, Fig. 3C). Tso does not explicitly disclose the manner of displaying the cluster names is changed in the clustering result summary table depending on the importance of each cluster in response to the clustering result. Jacobson teaches ranking the clusters (Jacobson, col. 1, line 58 - col. 2, line 22). Therefore, it would have been obvious to one of ordinary skill in the art at the time the

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invention was made to combine Jacobson with Tso to display the clustering result summary table depending on the importance of each cluster in response to the clustering result in order to display the most important clustering result summary entry first to attract the user's attention.

Claim 49 is rejected on grounds corresponding to the reasons given above for claim 36.

Claims 56-60 are rejected on grounds corresponding to the reasons given above for claims 36-40.

Claim 62 is rejected on grounds corresponding to the reasons given above for claim 42.

Claim 66 is rejected on grounds corresponding to the reasons given above for claim 46.

### ***Contact Information***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chongshan Chen whose telephone number is 703-305-8319. The examiner can normally be reached on Monday - Friday (8:00 am - 4:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E Breene can be reached on (703)305-9790. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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March 31, 2004

  
SHAHID ALAM  
PRIMARY EXAMINER